

AMENDMENTS TO THE CLAIMS

1. (Withdrawn) A continuous process for preparing alkylamines by reacting C₁₋₄-alkanols with ammonia in the gas phase in the presence of a shape-selective fixed-bed catalyst in a cooled reactor, wherein the shape-selective fixed-bed catalyst is present in a single contiguous fixed bed in the reactor and tubes through which coolants are passed run within the fixed bed to regulate the temperature of the fixed bed.
2. (Withdrawn) A process as claimed in claim 1, wherein cooling is carried out by means of boiling water cooling.
3. (Withdrawn) A process as claimed in claim 1, wherein the pressure in the coolant is from 40 to 220 bar and the pressure in the fixed catalyst bed is from 10 to 50 bar.
4. (Previously presented) A reactor for the reaction of C₁₋₄-alkanols with ammonia in the gas phase for preparing alkylamines, which comprises a shape-selective fixed-bed catalyst which is present as a single contiguous fixed bed in the reactor and through whose interior tubes through which a coolant can be passed run.
5. cancelled
6. (Withdrawn) A continuous process for preparing alkylamines by reacting C₁₋₄-alkanols with ammonia in the gas phase in the presence of a shape-selective fixed-bed catalyst in a reactor, wherein part of the C₁₋₄-alkanols, the ammonia or mixtures thereof is introduced in liquid form into the reactor in such a way that vaporization takes place on the fixed catalyst bed.
- 7-10 cancelled
11. (Withdrawn) A continuous process for preparing alkylamines by reacting C₁₋₄-alkanols with ammonia in the gas phase in the presence of a shape-selective fixed-bed catalyst in a reactor, wherein 30 - 90% of the C₁₋₄-alkanols, the ammonia or mixtures thereof introduced into the reactor is fed into the fixed catalyst bed at least one point at which a previously reacted

reaction mixture of C₁₋₄-alkanols and ammonia which has a temperature higher than that of the C₁₋₄-alkanols, ammonia or mixtures thereof fed in is present.

12. (Withdrawn) A continuous process for preparing alkylamines by reacting C₁₋₄-alkanols with ammonia in the gas phase in the presence of a shape-selective fixed-bed catalyst in a reactor, wherein a heat transfer medium which is inert toward the C₁₋₄-alkanols and ammonia and the reaction products and/or does not significantly affect the activity and selectivity of the catalyst is additionally fed into the fixed catalyst bed by addition to the reactor feed mixture.

13. (Withdrawn) A process as claimed in claim 12, wherein the heat transfer medium is or comprises water.

14. (Withdrawn) A process as claimed in claim 11 carried out in a reactor for the reaction of C₁₋₄-alkanols with ammonia in the gas phase for preparing alkylamines, which comprises a shape-selective fixed-bed catalyst which is present as a single contiguous fixed bed in the reactor and through whose interior tubes through which a coolant can be passed run.

15. (Withdrawn) A process as claimed in claim 6 carried out in a reactor for the reaction of C₁₋₄-alkanols with ammonia in the gas phase for preparing alkylamines, which comprises a shape-selective fixed-bed catalyst which is present as a single contiguous fixed bed in the reactor and through whose interior tubes through which a coolant can be passed run.

16. (Withdrawn) A process as claimed in claim 12 carried out in a reactor for the reaction of C₁₋₄-alkanols with ammonia in the gas phase for preparing alkylamines, which comprises a shape-selective fixed-bed catalyst which is present as a single contiguous fixed bed in the reactor and through whose interior tubes through which a coolant can be passed run.

17. (Withdrawn) A process as claimed in claim 11 carried out in a reactor for the reaction of C₁₋₄-alkanols with ammonia in the gas phase for preparing alkylamines, which comprises a shape-selective fixed-bed catalyst which is present as a single contiguous fixed bed in the reactor and through whose interior tubes through which a coolant can be passed run, wherein the C₁₋₄-alkanols, ammonia or mixtures thereof introduced into the reactor are fed in radially to the longitudinal axis of the reactor.

18. (Withdrawn) A process as claimed in claim 6 carried out in a reactor for the reaction of C₁₋₄-alkanols with ammonia in the gas phase for preparing alkylamines, which comprises a shape-selective fixed-bed catalyst which is present as a single contiguous fixed bed in the reactor

and through whose interior tubes through which a coolant can be passed run, wherein the C₁₋₄-alkanols, ammonia or mixtures thereof introduced into the reactor are fed in radially to the longitudinal axis of the reactor.

19. (Withdrawn) A process as claimed in claim 12 carried out in a reactor for the reaction of C₁₋₄-alkanols with ammonia in the gas phase for preparing alkylamines, which comprises a shape-selective fixed-bed catalyst which is present as a single contiguous fixed bed in the reactor and through whose interior tubes through which a coolant can be passed run, wherein the C₁₋₄-alkanols, ammonia or mixtures thereof introduced into the reactor are fed in radially to the longitudinal axis of the reactor.

20. (New) The reactor as claimed in claim 4, where monomethylamine and dimethylamine are prepared from the reactor.

21. (New) The reactor as claimed in claim 4, where the coolant tubes are arranged in the reactor so that the difference between outlet temperature and inlet temperature of the reactor is less than 60 °C.

22. (New) The reactor as claimed in claim 4, where the coolant tubes are arranged in the reactor so that the difference between outlet temperature and inlet temperature of the reactor is less than 35 °C.

23. (New) The reactor as claimed in claim 4, where the tubes have a cross section which does not have any corners.

24. (New) The reactor as claimed in claim 23, where the tube cross section is circular or ellipsoidal and the tube diameter is preferably from 1 to 5 cm.